



**British Journal of Education, Society &
Behavioural Science**
4(2): 191-200, 2014



SCIENCEDOMAIN *international*
www.sciencedomain.org

The Usage of Cognitive, Somatic and Negative Coping Strategies by Universiti Putra Malaysia (UPM) athletes

**Vincent A. Parnabas^{1*}, Yahaya Mahamood², Julinamary Parnabas³
and Nagoor Meera Abdullah¹**

¹*Faculty of Sport Science and Recreation, Universiti Teknologi MARA (UiTM), Malaysia.*

²*Faculty of College of Art and Science, University Utara Malaysia (UUM), Malaysia.*

³*Institute Pendidikan Guru, Kampus Darulaman, Jitra, Kedah, Malaysia.*

Authors' contributions

The work presented here was carried out in collaboration between all authors. All authors have contributed to, seen and approved the manuscript.

Original Research Article

Received 26th June 2013
Accepted 23rd September 2013
Published 26th October 2013

ABSTRACT

Background of the Study: Ability to cope with pressure and anxiety to increase performance is an integral part of sports. There is considerable evidence in support of the relationship between anxiety and coping strategies and performance of athletes. Coping strategies can be divided into cognitive, somatic and negative. Cognitive coping strategies are imagery, thought stopping, focus in the present, think practice, worst-case scenario, keep active, positive self-talk, simulation and goal-setting. Whereas somatic coping strategies, which include in the present research are progressive relaxation, meditation, breath control, autogenic training and biofeedback. Athletes also found using negative coping strategies like drugs, alcohol and smoking.

Aims: The purpose of this study was to evaluate the usage of cognitive, somatic and negative coping strategies according to gender. Besides that, the present study also finds the correlations between coping strategies and sport performance.

Study Design: Comparative descriptive study design was used to compare Cognitive, Somatic and Negative Coping Strategies among athletes.

*Corresponding author: Email: vincent@salam.uitm.edu.my, vincentbarnabas@yahoo.com;

Place and Duration of Study: Sample: The sample consisted of 98 athletes, male (N=53) and female (N= 45). The data was collected during sport between universities.

Methodology: The instrument used for the study comprised of a 26-item of Cognitive, Somatic and Negative Coping Strategies. In addition, the study also used Sport Performance Questionnaire.

Results: Result showed that male athletes used more cognitive, somatic and negative coping strategies. The result also showed that those athletes, who highly used cognitive, somatic and negative coping strategies, their performance increase.

Conclusion: Therefore, sport psychologist and coach should encourage female athletes to use more coping strategies, since it increases sport performances. Even though, negative coping strategies also enhance performance, but sport psychologist, sport counselor and coach, should discourage athletes use it, since it can cause negative effect to health and consider as unethical behavior.

Keywords: Cognitive; somatic; negative; sport performance.

1. INTRODUCTION

Researchers have reported that over 50 percent of consultations among athletes at an Olympic Games were related to stress or anxiety problems [1]. Athletes, who experience high levels of anxiety, are also more likely to withdraw from sport [2], suffer muscle pain, sickness and become aggressive during competitions [3]. Anxiety, as a negative emotion, affect perceptions in sport competitions, where a large majority of athletes consider anxiety to be debilitating towards performance, which may result in decreases in performance [3; 4]. When anxiety is not managed, athletes lose control and performance levels decrease [5].

There has been a large amount of research concerning the multidimensional aspect of anxiety [5]. Anxiety consists of two subcomponents: cognitive and somatic anxiety, which influence performance [5; 6]. The cognitive anxiety is the mental component, which is characterized by negative expectations about success or self-evaluation, negative self-talk, worries about performance, images of failure, inability to concentrate, and disrupted attention [5; 6]. Somatic is the physiological element, which is related to autonomic arousals, negative symptoms such as feelings of nervousness, high blood pressure, dry throat, muscular tension, rapid heart rate, sweaty palms and butterflies in the stomach [5; 6; 7].

According to [8] it is very important that athletes use appropriate coping strategies to deal with their kind of anxieties. This means, those athletes experiencing cognitive anxiety should use cognitive coping strategies, whereas athletes with somatic anxiety should use somatic coping strategies. Coping has been defined by [9] as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taking or exceeding resources of the person”.

The ability to cope with pressure and anxiety to increase performance is an integral part of sports [6; 7; 10]. There is considerable evidence in support of the relationship between coping strategies and performance of athletes [11]. Coping strategies can be divided into cognitive and somatic. Cognitive coping strategies are goal-setting, thought stopping, imagery, positive self-talk, and focus on the present. While somatic coping strategies are progressive relaxation, biofeedback, autogenic training, breath control and meditation. Research has indicated that most successful athletes use more coping strategies than less successful athletes [10; 12].

Besides these cognitive and somatic coping strategies, athletes also found using negative coping strategies like drugs, alcohol and smoking. According to the research done by [13] 48.9% male athletes and 49.2% female athletes used drugs in sports. A few research shows that alcohol usage among athletes was higher than non-athletes [14].

The purpose of this study was to evaluate the usage of cognitive, somatic and negative coping strategies according to gender. An additional aim of this research was also to find correlation between the cognitive, somatic and negative coping strategies with sport performance.

2. METHODOLOGY

The athletes' population of Universiti Putra Malaysia, who take part in sport competition between universities, was 120 athletes. 98 athletes were randomly chosen to take part in this study. Overall, the athletes are doing the Bachelor's degree in Sport Science course and age between 19 to 22 years old. Based on gender, male (N=53) and female (N= 45), took part voluntarily in this study.

The instrument used for the study comprised of a 26-item of Questionnaire of Coping Strategies, which measure cognitive, Somatic and Negative Coping Strategies. The questionnaire was developed according to the previous literature on the usage of coping strategies among athletes. Cognitive Coping Anxiety Strategies are Imagery, Thought Stopping, Focus in the Present, Think Practice, Worst-Case Scenario, Keep Active, Positive Self-talk, Simulation and Goal-setting. Somatic Coping Anxiety Strategies are Progressive Relaxation, Meditation, Breath Control, Autogenic Training and Biofeedback, and Negative Coping Strategies are Drugs, Alcohol, and Smoking. Besides that, the study also used Sport Performance Questionnaire, which consist 10 items.

The questionnaire uses two languages, English and Malay (the national language of Malaysia). The Malay version was translated by professional lecturers of Sport Psychology. Internal reliability was measured by Cronbach's alpha coefficient, for which >0.7 has been suggested as the standard for group comparison. In content validity testing, the result showed each item was under-stood, rated as relevant, appropriate and not difficult and correctly interpreted by more than 90% of respondents.

3. RESULTS AND DISCUSSION

3.1 Cognitive Coping Strategies

Table 1 shows the cognitive coping strategies used by Universiti Putra Malaysia (UPM) athletes. The highest cognitive coping strategies used by athletes were Positive Self-talk (M=3.22), followed by Thought Stopping (M=3.17), Keep Active (M=3.01), Think Practice (M=2.95), Goal-Setting (M=2.81), Simulation (M=2.77), Worst-case Scenario (M=2.41), Focus in the present (M=2.03) and Imagery (M=2.01).

Table 1. Cognitive coping strategy used by athletes

Cognitive coping strategy	Mean
Positive Self-talk	3.22
Thought Stopping	3.17
Keep Active	3.01
Think Practice	2.95
Goal-Setting	2.81
Simulation	2.77
Worst-case Scenario	2.41
Focus in the present	2.03
Imagery	2.01

The result showed that positive self talk was the highest usage of cognitive coping strategy among athletes. Positive self-talk, which deals with stressful situations by eliminating pessimistic thinking and worry, and leads to positive and rational feelings about an athlete's ability [2,3,6,8,15]. Whenever athletes' found themselves feeling depressed, frustrated, anger, worry, anxious or upset, they used positive self talk to gain confidence and optimistic thinking. Competition in sport brings many unpleasant feelings and stress. One of the best methods to combat those feelings is through using positive self talk. Positive self talk, like 'I can do it', 'I should ignore audience's rude behaviour' 'I can work harder' and so on is very powerful and can bring success in sports. One of the areas sports psychologist or coach can help athletes' is identify ineffective beliefs such as negative self-labels that hold them back from performing well.

3.2 Cognitive Strategies and Gender

Table 2 shows cognitive coping strategies among gender of Universiti Putra Malaysia (UPM). Significant gender difference, $t(98) = 2.115$, $p=.05$, was found with male athletes used more cognitive strategies than female athletes.

Table 2. Cognitive coping strategies and gender

Gender	Mean	t-Value	p-Value
Male	15.1141	2.115*	0.001
Female	10.6717		

* $p = 0.05$.

Present research showed that male athletes used more cognitive coping strategies than females. This result was concurrent with [16], that male use more positive self-talk and 'keep active' strategy than female athletes. It's well known that males are more active in sports and sport considered as 'man's world', therefore, they willing to do anything to gain success, including using cognitive strategies. Unfortunately, female athletes are not taking sport as serious activity or 'life-death' matter. Therefore, it appears, female athletes do not invest much time and effort in using cognitive coping strategies.

3.3 Cognitive Strategies and Sport Performance

Pearson's correlation was used to determine the relationship between cognitive coping strategies and sport performance. Table 3 shows the correlation of cognitive coping

strategies and sport performance of Univeriti Putra Malaysia (UPM) athletes. The results indicated a positive correlation between cognitive coping strategies and sport performance, $r(98) = 0.002$, $p < .01$.

Table 3. Correlation of cognitive coping strategies and sport performance

Subject	Sport performance
Cognitive coping strategies	0.002

* $p < .01$.

The result showed that athletes, who used the highest cognitive coping strategies, achieved the highest performance in sports. Contrary, athletes who used the lowest cognitive coping strategies achieved the lowest performance in sports. This result is inconcurrent with [17,18,19,20,21,22]. Cognitive strategies help athletes to focus, concentrate and eliminate negative thoughts, which is very important to enhance performance in sports. Sport Psychologists and coaches should find ways to develop cognitive coping skills to deal with athletes' setbacks and errors in sport competition.

3.4 Somatic Coping Strategies

Table 4 shows the somatic coping strategies used by Universiti Putra Malaysia (UPM) athletes. Somatic Coping Strategies used by athletes are Breath Control (M=3.11), Meditation (M=3.05), Progressive Relaxation (M=2.53), Autogenic Training (M=2.49) and Biofeedback (M=1.51).

Table 4. Somatic coping strategy used by athletes

Somatic coping strategy	Mean
Breath Control	3.11
Meditation	3.05
Progressive Relaxation	2.53
Autogenic Training	2.49
Biofeedback	1.51

The result showed that the usage of breath control was the highest among athletes. This concurred with [3], who found that the use of breath control was popular among athletes. Mastering the technique of deep breathing can make athletes relax, relieving tension and enhance self-confidence. Breathing techniques are easy to practice. Other methods of somatic coping strategy like biofeedback need an instrument. Furthermore, meditation, autogenic training and progressive relaxation need an instructor, place or audio CD. Therefore, many athletes used breathing techniques compared to other methods of somatic coping strategy.

3.5 Somatic Coping Strategy and Gender

Table 5 shows somatic coping strategies among gender of Universiti Putra Malaysia (UPM). Significant gender difference was observed, $t(98) = 1.227$, $p = .05$, with male athletes using more somatic strategies than female athletes.

Table 5. Somatic coping strategies and gender

Gender	Mean	t-Value	p-Value
Male	11.1141	1.227*	0.001
Female	8.6717		

* $p = 0.05$.

The result showed that male used more somatic coping strategies than female athletes. The result showed female athletes not only using less somatic coping strategy but cognitive coping strategy too. Females are less ambitious to achieve in sport compared to male athletes. Male athletes are often willing to do anything for high performance in sports even taking negative coping strategies like drugs, smoking and alcohol (Table 8). Most of the instructor, who organizing meditation, autogenic training and progressive relaxation courses are males. Hence, females athletes of Malaysia, who are still strong on eastern and muslim culture are shy to learn the methods from males. Therefore, females used somatic coping strategies less compared with males. Lack of knowledge most probably can be the main reason females used somatic coping strategy less compared males.

3.6 Somatic Coping Strategy and Sport Performance

Pearson's correlation was used to determine the relationship between somatic coping strategies and performance. Table 6 shows the correlation of somatic coping strategies and sport performance of Universiti Putra Malaysia (UPM) athletes. The results indicated a positive correlation between somatic coping strategies and sport performance, $r(98) = 0.013$, $p = 0.01$.

Table 6. Correlation of somatic coping strategies and sport performance

Subject	Sport performance
Somatic coping strategies	0.013

* $p < .01$.

The results show that athletes, who used the highest somatic coping strategies, achieved the highest performance in sports. Contrary, athletes who used the lowest somatic strategies achieved the lowest performance in sports. This result concurs with [7,23,24,25,26,27]. Most of the somatic coping strategies like meditation and progressive relaxation, need instruments, instructor and place. Therefore, athletes' uses more cognitive coping strategies compared with somatic coping strategies.

3.7 Negative Coping Strategies

Table 7 shows the negative coping strategies used by Universiti Putra Malaysia (UPM) athletes. The negative coping strategies used by athletes were drugs ($M = 3.41$), smoking ($M = 3.41$) and alcohol ($M = 2.48$).

Table 7. Negative coping strategy used by athletes

Negative coping strategy	Mean
Drugs	3.41
Smoking	3.41
Alcohol	2.48

The result showed that the highest usage of negative strategies were drugs and smoking. Drugs and cigarettes have the tendency to reduce stress and anxiety [28,29]. The easy availability of drugs, though illegal, contributes to the rise of drug addiction. Furthermore, drugs make it possible to achieve better performance without additional training. The result of the present study concurrent that smoking is more prevalent among athletes than non-athletes [26,30].

3.8 Negative Coping Strategies and Gender

Table 8 shows negative coping strategies among gender of Universiti Putra Malaysia (UPM). T-test showed a significant gender effect, $t(98) = 6.195$, $p=.01$, with male athletes using more negative coping strategies than females.

Table 8. Negative coping strategies and gender

Gender	Mean	t-Value	p-Value
Male	3.7742	2.165*	0.001
Female	2.2101		

** $p=0.01$.

The result showed that male athletes used more negative coping strategy than females. This result supports earlier findings by [31,32,33,34]. Malaysia, which is adopting eastern and Islamic culture considered smoking behavior of ladies as immoral and against the culture. Therefore, women in Malaysia very rarely engaged in smoking. Furthermore, women are not willing take the risk to get drugs since they are not brave and never see winning in a sport as a 'life-death' matter.

3.9 Negative Coping Strategies and Sport Performance

Table 9 shows the correlation of negative coping strategies and sport performance of Univeriti Putra Malaysia (UPM) athletes. A positive correlation existed between negative coping strategies and sport performance, $r(98) = 0.012$, $p=.01$.

Table 9. Correlation of negative coping strategies and sport performance

Subject	Sport performance
Negative coping strategies	0.012

* $p<.01$.

The result showed that athletes, who used the highest negative coping strategies, achieved the highest performance in sports. Contrary, athletes who used the lowest negative coping strategies achieved the lowest performance in sports. This supported by [35,36,37]. The relatively widespread use of such drugs as anabolic steroids to enhance performance dates back at least to the Olympics of the 1960's, although broad public awareness of such drug use seems relatively recent [38]. Even though, the present research revealed that the usage of drugs has enhance the performance of athletes, but taking risk in sports, is inevitably irrational, self-destructive and immature. Taking substances is improper as a means to winning in sports. Sport is supposed to promote health and fitness but taking drugs to enhance performance in the long run can cause hazards to health and even death.

4. CONCLUSION

The results showed that the highest usage of cognitive strategy was positive self talk. The highest usage of somatic anxiety was breath control. Furthermore, the highest usage of negative coping strategy was drugs and smoking. Male athletes obtained the highest score in cognitive, somatic and negative coping strategies.

Sport psychologists, sport counselors or coaches should encourage, train and transfer the knowledge of mental skills to female athletes. Preparing the athlete or team appropriately for competition is the responsibility of the coach. Preparing the female athletes in training alone, cannot guarantee high performance. Mental skill training should be used in improving female athletic performance. Coach should share effective stress management coping strategies and techniques in improving concentration among female athletes.

Overall, the results showed a tendency to increase sport performance when athletes use coping strategies (cognitive, somatic and negative). The use of coping strategies had a great impact on the improvement of athletes' performance. Sport psychologists, sport counselors or coaches should use this research to recommend coping strategies and also promote this strategy to less successful athletes to enhance their performance. Coaches should allow athletes to use coping strategies before and during sport events since these strategies enhance performances.

The result of most research revealed that usage of drugs benefits sport performance, but taking drugs is considered as cheating and unfair; harmful to users, clean athletes and society; perversion of sports (against its nature), as it is not natural leading to dehumanization. Furthermore, drugs harms the society (socially debilitating effects of doping), harms of coercion (taking risks with their health as a consequences of being competitive) and contract violation (failing to respect other competitors). Therefore, sport psychologist and coaches should play an important role to curb the usage of drugs, smoking and alcohol by promoting positive coping strategies such as cognitive and somatic strategies.

CONSENT

For data gathered during quantitative surveys (questionnaires), where no personal data are collected or where personal identifiers are removed from the data, obtaining written consent may not be required. Anyway, information sheet had been provided to participants, making clear that consent is implied from participating in the survey or filling out the questionnaire.

ETHICAL APPROVAL

Ethical approval is not required for this research since the questionnaires do not involve the collection or use of confidential or sensitive personal information.

ACKNOWLEDGEMENTS

This research received no specific grant from any funding agency in the public, university, commercial, or not-for-profit sectors.

COMPETING INTERESTS

Authors have declared that no significant competing financial, professional, personal relationships or personal interests that might have influenced the performance or presentation of the work described in this manuscript.

REFERENCES

1. Murphy SM. The on-site provision of sport psychology services at the 1987U. S Olympic Festival. *The Sport Psychologist*. 1988;2:105-130.
2. Cox RH. *Sport Psychology, concepts and applications*. New York: McGrawHill; 2011.
3. Weinberg RS, Gould D. *Foundations of Sport and Exercise Psychology*. Champaign, IL: Human Kinetics. 2011.
4. Raglin JS, Hanin YL. Competitive anxiety. In Yuri, L.H., *Emotions in Sport*. Champaign, IL: Human Kinetics. 2000.
5. Martens R., Vealey RS., & Burton D. *Competitive Anxiety in Sport*. Champaign, Illinois: Human Kinetics; 1990.
6. Jarvis M. *Sport Psychology*. New York: Routledge; 2002.
7. Jones G. Stress and anxiety. In S.J. Bull, *Sport Psychology: A self-help guide*. Ramsbury, Marlborough: Crowood; 2000.
8. Anshel MH. *Sport psychology: from theory to practice*. New York: Benjamin Cummings; 2003.
9. Lazarus RS, Folkman S. *Stress, appraisal and coping*. New York: McGraw-Hill; 1984.
10. Orlick T, Partington J. Mental links to excellence. *The Sport Psychologist*. 1988; 2:105-130.
11. Humara M. The relationship between anxiety and performance: A Cognitivebehavioral perspective. *Athletic Insight 1(2):The Online Journal of Sport Psychology*; 1999.
12. Gould D, Eklund R, Jackson S. Coping strategies used by U.S Olympic Wrestlers. *Research Quarterly for Exercise and Sport*. 1993;64:83-93.
13. Anshel M.H. Causes for drug abuse in sport: A survey of intercollegiate athletes. *Journal of Sport Behavior*, 1991; 14: 283-307.
14. Overman SJ., & Terry T. Alcohol use and attitudes: A comparison of college athletes and nonathletes. *Journal of Drug Education*, 1991; 21, 107-117.(14)
15. Ampofo-Boateng K. *Understanding Sport Psychology*. Shah Alam, Selangor, Malaysia: UPENA; 2009.
16. Wu TY., Pender N. & Nouredine S. Gender differences in the psychosocialand cognitive correlates of physical activity among Taiwanese adolescents: A structuralequation modeling approach. *International Journal of Behavioral Medicine*, 2003; 10 (2): 93 –105.
17. Filby WCD., Maynard, I.W. & Graydon, J.K. The effect of multiple-goalstrategies on performance outcomes in training and competition. *Journal of Applied SportPsychology*, 1999; 11: 230-246.
18. Gould D., Russell M., Damarjian N. & Lauer L. A survey of mental skills training knowledge, opinions, and practices of junior tennis coaches. *Journal ofApplied Sport Psychology*. 1999; 11: 28-50.
19. Landin D. & Herbert EP. The influence of self-talk on the performance ofskilled female tennis players. *Journal of Applied Sport Psychology*, 1999; 11: 263-282.
20. Miller B. Mental preparation for competition. In S.J. Bull, *Sport Psychology: A self-help guide*. Ramsbury, Marlborough: Crowood; 2000.

21. Neil R., Mellalieu SD. & Hanton S. Psychological skills usage and the competitive anxiety response as a function of skill level in rugby union. *Journal of Sports Science and Medicine*, 2006; 5: 415 – 423.
22. Theodorakis Y., Weinberg R., Natsis P., Douma I. & Kazakas P. The effects of motivational versus instructional self-talk on improving motor performance. *The Sport Psychologist*, 2000; 14: 253-271.
23. Blumenstein B., Bar-Eli M. & Tenenbaum G. The augmenting role of biofeedback: Effects of autogenic, imagery, and music training on physiological indices and athletic performance. *Journal of Sport Sciences*, 1995; 13: 343-354.
24. Kavussanu M., Crews DJ., & Gill DL. The effects of single versus multiple measures of biofeedback on basketball free throw shooting performance. *International Journal of Sport Psychology*, 1998; 29 (2): 132-144.
25. Khasky AD., & Smith JC. Stress, relaxation states and creativity. *Perceptual and Motor Skills*, 1999; 88 (2): 409-416.
26. Rasid ZM., & Parish TS. The effects of two types of relaxation on student's levels of anxiety. *Adolescence*, 1998; 33 (129): 99-101.
27. Zaichkowsky LD. & Fuchs C. Biofeedback applications in exercise and athletic performance. *Exercise and Sport Science Reviews*, 1988; 16: 381-421.
28. Anshel M.H. Psychology of drug use. In R.N. Singer, M. Murphey and L.K. Tennant, *Handbook of research on sport psychology*. New York: Macmillan; 1993.
29. Montgomery B., & Morris L. *Living with anxiety*. Singapore: Heinemann Asia; 1994.
30. Gingiss PL. & Gottlieb NH. A comparison of smokeless tobacco and smoking practices of university varsity and intramural baseball players. *Addictive Behavior*, 1991; 16: 335-340.
31. Dodge TL. & Jaccard JJ. The effect of high school sports participation on the use of performance-enhancing substance in young adulthood. *Journal of Adolescent Health*, 2006; 39: 367-373.
32. Jason K. Jon L. & Jung-Do C. Alcohol use among intercollegiate student athletes'. *The Sport Journal*, 8: No.1. United States Sports Academy. 2005. October 15, 2009, from http://www.thesportjournal.org/2005Journal/Vol8-No1/SCJ_01_alcohol.asp.
33. Mheen PJM., Smith GD., Hart CL & Hole DJ Are women more sensitive to smoking than men? Findings from the Renfrew and Paisley study. *International Journal of Epidemiology*, 2001; 30: 787-792
34. Moseley KS. Alcohol use and the intercollegiate athlete: The influence of type of sport. Dissertation of University of Texas at El Paso; 2006.
35. Bahrke M.S. & Yesalis C. *Performance-enhancing substances in sport and exercise*. Champaign, IL: Human Kinetics; 2002.
36. CBC Sport on line In depth. Eight types of drug. *Drugs and sport*. 2005. Retrieved November 15, 2010, from <http://www.CBC Sports Online Drugs and Sport Types of Prohibited Drugs.htm>.
37. Golby J. Use of factor analysis in the study of alcohol induced strategy changes in skill performance on a soccer test. *Perceptual and Motor Skills*, 1989; 68 (1): 147-156.
38. Simon RL. Good competition and Drug-Enhanced Performance. In W. J. Morgan, *Ethics in Sport*. Champaign, IL: Human Kinetics; 2007.

© 2014 Parnabas et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<http://www.sciencedomain.org/review-history.php?iid=302&id=21&aid=2383>